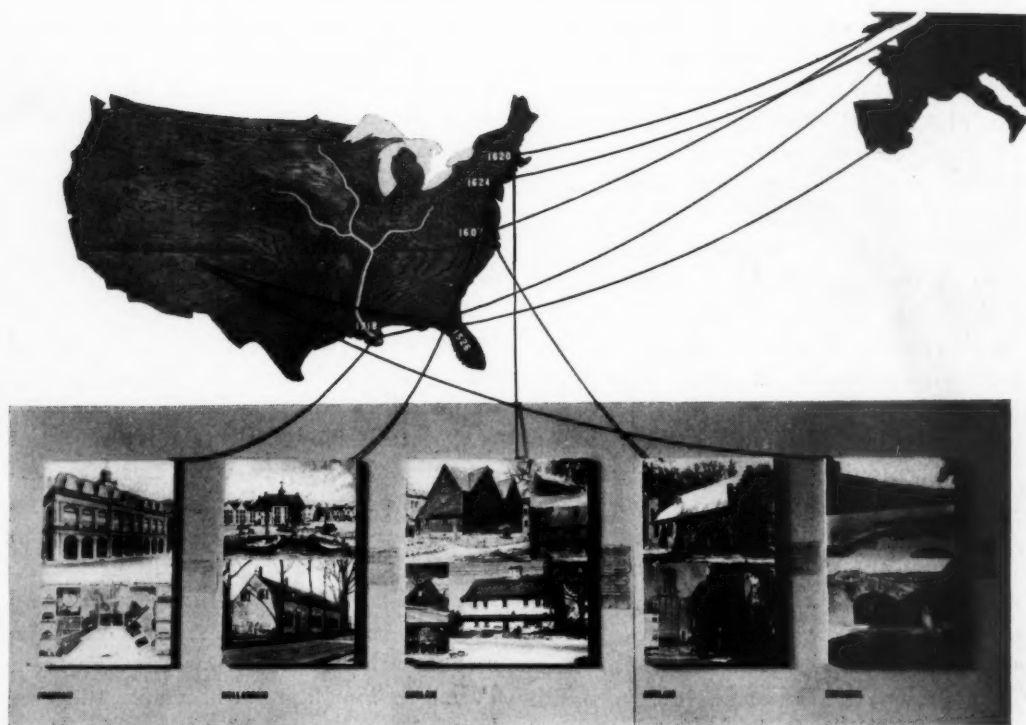


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*Architecture in the United States*

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## Architecture in the United States

*The following article was originally published in Trois Siecles d'Art aux Etats-Unis, the catalog of the exhibition of American art held in the summer of 1938 at the Musée du Jeu de Paume, Paris. The article is reprinted here, with revisions, to accompany the exhibition of Three Centuries of American Architecture which will be sent on tour through the United States following its New York showing.*

For the last 300 years American architecture, like our culture in general, has had its principal sources in Europe.

But in acknowledging this debt we must recall many parallels in architectural history: France imported her Renaissance, and Spain and England borrowed *most* of their architectural styles and naturalized them later, partly through the compulsion of local climate, materials or requirements, partly through the influence of existing national forms.

The relationship between the architecture of the New World and that of the Old was not the same all over America. In Mexico armies of native craftsmen quickly translated the styles imported from Spain into truly Mexican terms. But there was no similar assimilation in the thirteen English colonies. There was almost no modification of European forms by *indigenous* influences because the Indians we were continually driving westward were not builders and had no architectural tradition of their own. Only in those southwestern parts of the country formerly Mexican had the Indians developed building before the arrival of the white man.

### The 17th Century

The first buildings of the European settlers were stringently utilitarian forts and dwellings. Once the newcomers were securely established, they built churches

and a few houses of more consciously architectural character. Though traces survive of French, Spanish and Dutch styles, most of our 17th century types derive from the English buildings which the settlers remembered with varying accuracy. Thus are explained the medieval character of the Gothic brick churches of Virginia, the early Massachusetts houses or Governor Arnold's surprisingly pre-Norman mill at Newport.

### 18th Century to the Revolution

After 1700, tobacco-rich southern planters and shipping magnates of New England began to demand monumental settings worthy of their new importance. From an imported English "builder's manual" or "carpenter's guide" they would copy an ornamental doorway with classical cornice and perhaps pediment, and, later, an entire façade or even a whole plan. From Gibbs' book, published in 1728, derive the spire of St. Paul's Chapel in New York and the whole scheme of Mt. Airy in Virginia, a scheme Gibbs had himself taken from Palladio. The first building for the College of William and Mary (1695) was actually designed abroad, in the London office of Sir Christopher Wren.<sup>1</sup>

Even the closest American derivatives varied from their British models of a generation earlier in that they were modified by different physical and social conditions.

<sup>1</sup>Despite the many claims, this is probably the only building in America directly connected with the Wren office.

Because Virginia is hotter than England, verandas appeared on planters' houses. Some building materials, such as brick, were common to the mother country and the colonies and were handled in both places in much the same way, but the work of some of our 18th century stone masons is often as native as the stone they used. England did not know such a development in wood as ours, nor any comparable variety of forms in wood. Sometimes the carpenter-builder would not quite understand the complexities engraved in his manual, and sometimes he worked from memory—a novel form might result.

### Early Vernacular

By 1700, the sum of these variations could form a sort of local tradition, particularly in the centers most isolated from Europe. Many New England communities achieved a genuine architectural expression in a robust local style—from the severe Puritan

faith of the four-square white meeting-house on the village common to the trim snugness of the houses around it. As in painting and sculpture, this honest vernacular art has now come to be recognized as a serious rival of the elegant importations.

### The Early Federal Period (1781-1830)

Following the Revolution, the economic security of the new republic and its speedily increasing population caused new houses, churches and civic buildings to appear throughout the thirteen states. European models, now usually late Georgian or Adam, were still major style sources, but a conscious nationalism began to assert itself. The first professional American architect appeared in the person of Charles Bulfinch (1763-1844). His State House in Boston may use ideas from Chambers' Somerset House in London; it may pay lip-service to English books;



Domestic architecture of the early Republic, as shown in Paris, with model of the Lefferts House, Brooklyn, N. Y.

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nevertheless it is architecturally autonomous and could stand nowhere but in New England.

Wood affected design, even in these rather academic styles. Inspired cabinet-makers such as Samuel McIntire of Salem (1757-1811) invaded the field of architecture where their ornamental detail remained more in the scale of furniture than of architecture. Exterior and interior moldings rivaled each other in fineness; the sacrosanct stone-evolved members of the classical cornice often took on new forms conditioned by saw and augur; columns were attenuated to the proportions of wood posts. This slender new delicacy paralleled late 18th century refinement in Europe.

### Neo-classicism

Affected by European dilettante enthusiasm for the antique, Thomas Jefferson, before his election as President, planned a columnar temple-front for the governor's house in Williamsburg. His Virginia State Capitol (1785), modeled after the Augustan *Maison Carrée*, was the first large copy of a classical temple in either Europe or America. Its exterior dimensions came from measured drawings, with the Corinthian capitals changed to more easily carved Ionic. The climax of Jefferson's architectural masterpiece, the University of Virginia, is a library derived from the Roman Pantheon, flanked by temple-like houses, all adorned with the most admired orders from antiquity, Palladio and Vignola.

At precisely the same time that the French were finding the "correct" antique style the most fitting architectural expression for the ideals of Napoleon's Empire, Americans were finding it equally symbolic and appropriate for the young democracy. Literary and pseudo-historical

notions guided our choice, but with such gusto that American neo-classicism, far from being an archeological hot-house growth, kept vigorous through the middle of the century. Our map boasted new towns named Rome, Athens, Troy, Syracuse, Ithaca, Sparta and our landscape sparkled with white temple-porticoes on houses, churches, banks, tombs and even barns. A classicistic style continues even today in mausoleums, museums and official government buildings.

Early 19th century Russia, Scotland and America saw the greatest flourishing of neo-classicism. In all three countries new prosperity (in America great physical expansion as well) nurtured a conviction of importance which demanded suitably impressive architectural incarnation in the latest style. Colonnades proved irresistible.

### The Gothic Revival

Again in step with European fashion, America accepted another style dictated by literary taste: sham-Gothic romanticism. Appropriately, one of its first monuments was the work of one of our first literary romantics: Washington Irving re-decorated *Sunnyside* in the Gothic manner (1835) under the influence of Sir Walter Scott's *Abbotsford*; Scott sent him ivy for it. Well-read clergymen held that Gothic trimming was especially suited to churches, even to those of the most primly Protestant sects. Church spires began to shed the colonnettes and urns they had displayed since Wren and to put forth Gothic crockets in an effort to approximate the medieval forms from which Wren had derived them in the first place.

Always exotic here, the style often developed a wayward charm in wood. It ran through many of the English Victorian Gothic vagaries in stone and brick before "purifying" itself archeologically during

pendant tout le temps que nous construisions  
l'architecture monumentale que vous venez de voir,  
nous construisions aussi d'une manière simple,  
directe et peut être plus authentique.

#### ARCHITECTURE RÉGIONALE en BOIS

BUT all the time that we were building the monumental  
architecture you have just seen,  
we were also building in a simple, straightforward  
and perhaps more native way.

#### VERNACULAR ARCHITECTURE IN WOOD



Vernacular architec-  
ture in the Jeu de  
Paume

the late 19th century in a dilution of the theories of Viollet-le-Duc.

#### Disintegration (later 19th century)

From about 1850 on, the country pushed westward with increasing avidity, while immigrants swarmed into the eastern ports. New towns and new fortunes sprouted rootless overnight, bred by busy mills, factories, railroads and mines. Rather than any consistent development of de-

sign or structure, confused activity and un-directed speed characterized most of the building. Thinner wood studs and nails, machine-made and newly cheap, made possible the thousands and thousands of quickly erected, flimsy, speculative buildings, architectural weeds of the period of America's greatest expansion. Lathe and jig-saw turned out cheap ornament in fantastic variety. The newly rich commanded solidier mansions or churches or banks, eye-filling in their parvenu magnificence.



England was still the favorite model: English architectural magazines had replaced the craftsman's copy-books.

### Chaos

The typical successful architect of the last 50 years, after his trip to Europe with, perhaps, brief study at the Ecole des Beaux-Arts or the American Academy in Rome, turned his back on most of the *fundamental* problems of architecture and went into his library to find historically accurate detail for the houses (and even garages) of his clients. The rooms in which they had to live he fitted in behind the façades by all too Procrustean methods.

Following the white pomp of the Chicago Exposition of '93, our "better" offices, banks and city halls have often been academic-classic, or, more recently, "modernistic"; our churches and universities neo-Gothic or neo-Colonial, many on a scale unthinkable in Gothic or Colonial days. The functional requirements and construction of a building determined its appearance to some extent, but, quite independently, so did its *style*. This was something adapted from some other building in a book. Architectural schools taught many *styles* and there were a great many books and magazines. It is not surprising then that stylistically a city block in New York, Chicago or San Francisco today encompasses 2000 years and 5000 miles with bland unconcern.

The 19th century was by no means all bad; there were a few honest and inventive architects.

### Vernacular and Utilitarian Work

The vernacular styles kept some of their integrity. (We have built straightforward wood-frame houses for 300 years.) Sometimes local innocence admired city styles, and with fresh imagination transmuted

the humdrum urban models into folk-classic, folk-Gothic or folk-"Italian Villa."

In a period when monumental architecture had strayed from problems of function and structure and their resultant forms, barns, grain-elevators and all sorts of commercial and industrial buildings solved these problems with admirable though unconscious candor. There is dignity and often beauty in their pure utilitarian forms—from the covered wooden bridges of rural New England to the steel suspension Brooklyn Bridge (1872) and its recent spectacular descendants. The structural possibilities of steel were discovered by engineers, not architects. Reinforced concrete first took its natural forms here in warehouses. Factories and greenhouses were the first buildings to decrease their outside wall areas to make way for glass, which was becoming cheaper and available in larger and larger areas all through the 19th century.

The adroitness and technical efficiency of these strictly utilitarian works were not taken over into orthodox architecture until the advent of a truly modern style, but remained unseen by hundreds of our architects who were too busy with less important problems.

The architectural rationalists of the 19th century, Viollet-le-Duc and Louis Sullivan, etc., are anticipated by one surprising herald, the American sculptor, Horatio Greenough: "Could we carry into our civil architecture the responsibilities that weigh on our shipbuilders, we should ere long have edifices as superior to the Parthenon, for the purpose we require, as the *Constitution* or the *Pennsylvania* is to the galley of the Argonauts." "By Beauty I mean the promise of function. . . . By Character I mean the record of function." (*Essays*, 1843)

**"Folk-Gothic" Church,  
Ipswich, Mass., c.1850**



#### **H. H. Richardson (1838-1886)**

Only three great builders transcend the disorder dominant from the Civil War to 1930—Richardson, Sullivan, Wright.

Although Richardson's reputation grew from his free adaptation of French Romanesque, his importance today lies in the esthetic discipline of his last and least derivative works. In a parvenu age, given over to confusing plastic elaboration, Richardson relied upon a sober reaffirmation of architectural fundamentals. His last buildings solve their functional problems simply, with a broad Handelian majesty of proportion.

The powerful and austere Marshall

Field Warehouse (1885, now destroyed) depends on primary rhythms, adjustment of solid and void and a profound feeling for the tectonic quality of the stone, in dramatic contrast to his contemporaries' abuse of materials. Richardson's place as a pioneer of modern architecture is secured by his power to create a straightforward and handsome architectural design out of such a commercial building—then not considered a suitable "subject" by most architects—a rational design which in no way denies the commercial character of the building nor its simple construction, but rather makes them reveal themselves with severe eloquence.

## Louis Sullivan (1856-1924) and the Skyscraper

Sullivan was perhaps the only architect who really understood the pioneer quality of Richardson's last works, and who was able to use Richardson's sound credo in the solution of new problems. He was active in building only from 1880 to 1900. After this, during his tragically idle last

years, he formulated his theories in magazine articles and books. "It is of the very essence of every architectural problem that it contains and suggests its own solution." "Form follows function."

The steel skeleton-frame building, in which Sullivan did his most significant work, is an American achievement of the 1880's. The early development of the skyscraper may be summarized as follows:

*Cast iron had been used for façades by Bogardus of New York from 1848 on; Walters' dome of the Capitol at Washington (1851) is of cast iron.*

*Wrought iron girders soon carried floors and slender vertical posts of wrought iron soon supported these girders. Joined together they made an all-metal skeleton within the outer masonry walls.*

*Tall buildings were thus made possible without heavy interior bearing walls.*

*The passenger elevator, developed at the same time, made tall buildings usable as well as possible.*

*By 1880 the price of land in the congested business centers of New York and Chicago made tall buildings the only profitable ones.*

*In 1885 Major Jenney completed the Home Insurance Building in Chicago with an iron framework within and with iron posts strengthening the exterior piers. Tentative and inept in design, it is nevertheless of epochal importance as the first real skyscraper.*

*Holabird and Root completed the Tacoma Building in Chicago in 1888 with an all metal frame which supported not only the floors but the exterior masonry as well.*

*These first skyscrapers represent the metamorphosis of crustacean building into vertebrate, the most thorough revolution in architectural construction since the development of the full High Gothic system 650 years before. It was not yet matched by any comparable development in architectural design.*

Sullivan was the first to find an architectural form for this phenomenon. The Wainwright Building (St. Louis, 1891) relates a handsome design to its skeleton construction by accenting its verticals (and multiplying them, for only every other one contains a steel column). The uniformity of exterior treatment aptly indicates the many identical offices within. The Carson-Pirie-Scott Store (Chicago, 1899) frankly exhibits its cage-like steel skeleton, sheathed only in terra cotta. The entire area between the structural members

is glass. Sullivan for this one great and prophetic building alone may claim his place with contemporary European pioneers of the modern movement, Loos, Wagner, Berlage and Van de Velde.

## Frank Lloyd Wright (1869- )

Wright worked on houses in Sullivan's office from 1888 to 1894. Without taking over his master's stylistic peculiarities, he understood Sullivan's basic rationalism more profoundly than anyone else.

His first achievement was to revolution-



ize the house plan, in the many houses he built near Chicago during the next 20 years. The change was no arbitrary one, but the result of a sympathetic understanding of the physical and psychological needs of the inhabitants. Instead of being cut up into many box-like rooms, the living-space flows freely from hall to living-room to dining-room, reaching out for abundant light and air wherever needed. "An organic form grows out of conditions as a plant grows out of soil . . . both unfold similarly from within." Windows are no longer holes piercing the wall, but join each other to form long horizontal bands which let in a new abundance of light and air. The whole conception of a space continuum, from room to room, from indoors to outdoors, is one of the most revolutionary in architectural history. Its influence on subsequent planning here and abroad has been incalculable.

In his best early work, the long low lines, the sensitive respect for the qualities inherent in the materials and the naturalness with which these buildings exist in their natural surroundings all proclaim the lyrical genius of the only great architectural romantic of our century.

Wright's work was published in Germany in 1910 and 1911, long before it was widely known here. Miës van der Rohe, Gropius, Oud and other leaders of modern architecture have acknowledged the inspiration they found in his courageous pioneer works. His influence in Holland was such that he could properly be counted one of the founders of the modern Dutch school.

Irreproachable engineering skill fitted him to reinterpret other architectural problems. Wright has designed important office buildings, factories, a glass skyscraper and a wealth of other structures, searching like Sullivan in the conditions

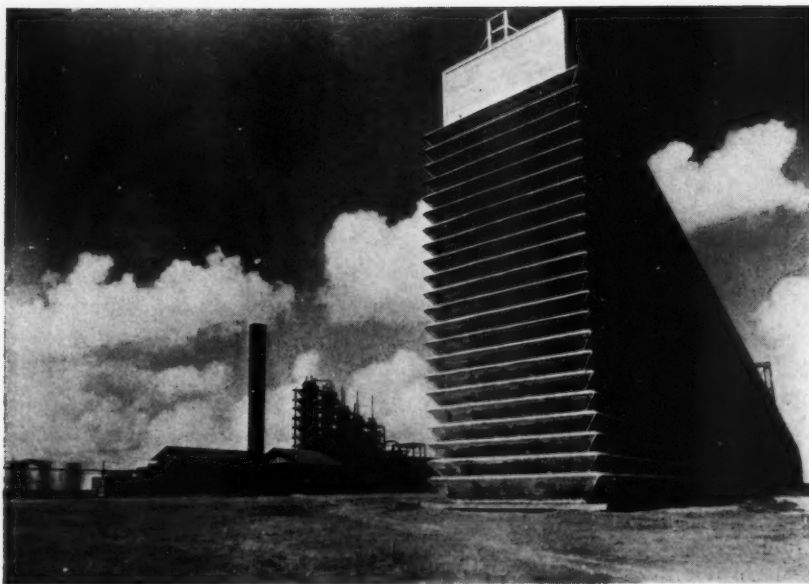
of each particular problem for the form best suited to solve it. In the 1920's he evolved an ingenious system of building in pre-cast concrete blocks with metal reinforcing rods run through the joints (Millard House at Pasadena, 1921) and developed other new building techniques adapted to modern production methods.

After some years of comparative inactivity in building, he is now, in his seventies, busier than ever before. His best recent work, like the Kaufmann House on Bear Run, Pennsylvania, and the Johnson Factory at Racine (now being finished) proclaim dramatically that his imaginative powers are undimmed and untarnished after the longest and most important career in American architecture.

### **Modern Architecture in the United States Today**

Apart from the work of Wright, modern architecture has been slow to develop in America. We have been very conservative in clinging to the traditions of ages and people not our own. The lesson of Sullivan and Wright has not been learned; Wright has imitators, but no important followers.

We have again turned to Europe. Instead of the carpenter's guides of their forbears, our younger progressive men were at first nourished on magazines and the books of Le Corbusier. The large exhibition of modern architecture held by the Museum of Modern Art in 1932 had a healthily disturbing influence. Many of our younger architects have travelled and studied abroad. Europeans have come to work here (Neutra, Lescaze and, recently, Miës, Gropius and Breuer). However, as so often before in our three centuries of architectural history, the importation does not remain unassimilated, but adapts its form and appearance to the conditions of its new surroundings.



Water-cooling  
tower, Texas  
City, Texas

Ritchie

European doctrines are being translated into American terms; transplanted architects have often turned out to be more American than European. This "naturalization" has come about in several ways. In the first place, the imported style already contained elements which Europeans had borrowed from Wright and from our technicians: these were easily repatriated. Also, building types native to America have maintained their national character: skyscrapers, for example, for the first time since Sullivan, have within this decade been given forms naturally suited to them. Real architecture of a special and very American character has been achieved with the utilitarian forms of some of our recent mammoth factories, power plants, dams and even municipal incinerators. Local materials and conditions have already fostered *regional* developments of genuinely modern building.

Avoided at first in the self-consciously "pure" phase of the modern movement in architecture, traditional materials and

building methods have recently been welcomed. The good American wooden house, with its stud frame and clapboard sheathing, has been seen anew by contemporary eyes which have educed from it forms at once modern and native (recent work by Gropius, Howe, H. H. Harris, Stubbins & Wills, Day, etc.). Modern houses in Pennsylvania have adapted from neighboring barns the characteristic local stonework freely combined with other materials. Stoneless and woodless New Mexico raises modern buildings of its own adobe blocks and roofs them ingeniously and half-traditionally with adobe on wattle. Materials traditionally held unsuitable for "good" architecture are now accepted (cinder-block houses by Kocher, Stone, etc.).

We want the sense of freedom that comes from space not too rigidly enclosed. The interior of our average house is built on a much more open plan than the European, a scheme practicable since our more efficient central heating does not demand isolated rooms. We have made the covered

or glassed-in porch a regular adjunct of American life. Even in our bedrooms we demand large windows in different walls to assure ourselves those very *courants d'air* which so many Europeans avoid.

But the fundamental change has been a deeper one. Architecture has changed because the needs and tastes of the people who use it have changed. For example, Neutra's California houses not only take advantage of the climate and many new materials, but, like those of Wright, they take their form from the whole way of life of the people who live in them. A family of 1880 would be very unhappy in one of them. The Michigan schools of Lyndon and Smith are so well designed for their immediate purpose that they are as much an expression of American democratic ideals as is the free education of the children within them.

#### **Mass-production and Standardization; Pre-fabrication**

Above all, our kitchens, pantries and famous bathrooms have taken on special forms to meet our very exacting demands that they be well-equipped, compact and easy to keep clean. Typical American mass-production and standardization have greatly diminished the price of equipment while increasing its efficiency. Kitchen fixtures have been standardized so that any desired arrangement can be made by fitting the necessary units together to form larger units with sleek uninterrupted surfaces.

The same standardization has been applied to windows, doors and whole units of the house itself, thus adapting to architectural purposes the assembly-line technique of rapid mass-production which

so spectacularly turns out Fords. Many architects have invented houses constructed of standardized floor, wall and roof units in metal, plywood<sup>1</sup> and new synthetic materials. The whole process of erection of a skyscraper or a large scale housing development every year involves the use of more mass-production and assembly-line methods.

Complete pre-fabricated houses have been for sale for several years, to be delivered and erected within four days. However, this has yet to be done on a scale large enough to bring the cost down to a price level in any way comparable with that of automobiles.

#### **Housing**

Of our 130,000,000 people, one-third is ill-housed. Of that third, an unknown number live in dwellings that must be judged inadequate by any humane standard. Yet there is an automobile for every fourth person in the United States. This shocking disparity is hardly surprising when building is so much less efficiently organized than automobile manufacture.

The Wagner-Steagall Act was passed by Congress in 1937, appropriating \$500,000,000 for low-cost public housing; this sum has since been increased to \$800,000,000. Supplemented by contributions from municipal bureaus, which must supply 10% of the total cost, this sum may be enough to care for perhaps 300,000 families. The bloated values of city real estate, the high construction costs resulting from the disorganization of our building trades and inefficient architectural design may make it difficult to repeat as often as necessary such accomplishments as the Resettlement Administration's *Greenbelt* or the PWA's

<sup>1</sup>The Forest Products Laboratory has developed this and other forms of wood for many extremely interesting new architectural uses.



Butane storage tanks, Borger, Texas

Ritchie

*Williamsburg and Carl Mackley Houses.* However, Commissioner Rheinstein's miracles of efficient organization in New York show that construction costs *can* be lowered, and the quality of many of the first projects executed under the new U. S. Housing Authority allow some optimism for the future.

We have developed new and inexpensive materials and efficient means of mass production for the manufacture of automobiles and radios. We are now faced with the problem of driving down our house-building costs by finding the equivalent materials and production methods for the manufacture of well-designed houses.

The critical problem confronting the American architect today is not a simple one of construction, function, esthetics nor naturalization of an imported style. It is part of the humanitarian and social problem of trying to provide decent homes in

decent communities for those millions of our people who do not have them.

Just as skyscrapers were the typical monuments of American architecture in the boom of the '20's, housing developments may well be the characteristic monuments of the '40's.

As "machines to live in" it is reasonable to expect them to work as efficiently as our other machines.

As an important and formative part of daily environment it is reasonable to demand that they be more than machines, that they promote the well-being of the men and women who live in them and the present and future happiness of their children.

We must have the ART as well as the SCIENCE of architecture.

JOHN McANDREW

*Curator of Architecture and Industrial Art*

